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INTELLECTUAL PROPERTY RIGHTS AND TECHNOLOGICAL EVOLUTION IN  
ENTERTAINMENT AND MASS MEDIA MARKETS\*\*

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## 1 Collective administration of artistic production's copyrights

The concept of intellectual property rights is relatively straightforward for the scientific and technical creations, as well as for artistic creations like paintings, whose fruition by people is immediate. For other artistic works, like musical creations, fruition needs performance. Although some artists are both the authors and performers of their own songs, the two roles are formally distinct. In the past the juridical position of the performers was not good, because of the vague definition and low protection of their rights. In the last decades the condition of professional performers has improved and exclusive rights nowadays exist for the performers as well as for the authors, following the agreements promoted by the World Intellectual Property Organisation (WIPO), as the WIPO Performances and Phonograms Treaty (WPPT).

Authors and performers could directly negotiate their individual bargain with record corporations and other users of their productions. However, only few superstars are in a such position to negotiate with the great corporations at the same level. For most authors and performers individual bargaining is not a realistic option, notwithstanding the existence of exclusive rights.

Alternative solution has been offered by the performing rights' organisations (PROs). Each PRO has a repertoire consisting of the works of the copyright holders they represent. Although the main function of these organisations is the collective administration of copyrights, their importance has gradually increased. In many countries PROs deal with several issues concerning copyright enforcement and licensing.

The economic role of PROs has been analyzed by Katz ([1]). In each country a single organisation often represents all the copyright holders, although with some exceptions. For instance, in the United States three PROs live together, usually without conflicts. The PROs typically issue blanket licenses. With a blanket license a radio station may perform all the songs of the repertoire of the organisation.

In economic terms, a PRO acts as a monopoly. Copyrighted material of its repertoire often covers the whole demand of a large and fragmented market. In addition, the copyright holders are usually in a too weak position to impose conditions to the organization that should represent and protect their interests. Collective administration of copyrights is often performed under conditions that are mostly unilaterally established by the PROs. However, this monopolistic situation is not generally perceived as negative. Copyright administration by a single organization in the market allows scale economies not achievable with direct and individual negotiations between copyright holders and their counterparts. In addition, the monopoly could achieve economic efficiency through price

discrimination. Different users could access to copyrighted material at prices corresponding to their willingness to pay. With price discrimination the monopolist will sell the same quantity of goods as in a perfectly competitive market. This situation partially represents the commercial behavior of the PROs. Licenses for public performance of copyrighted material are released at different fees, depending on the final use. A small pub will pay a lower license fee than a radio or TV station for the performance of the songs of the PRO repertoire. However, efficiency cannot be fully achieved because price discrimination cannot be applied to each single user. In several countries fee differentiation between categories of users is allowed, but it is forbidden between the single users within a category.

In his paper Katz has examined the plausibility of the existence of a natural monopoly in the market of copyrighted artistic material, usually invoked to justify the role of PROs. From the supply side, scale economies allowed by collective administration apparently support this point of view. However, in some countries the simultaneous existence of more PROs represents a confutation of the theory of a natural monopoly. The importance of PROs in the protection of the interests of authors and performers and in the enforcement of copyright laws is perhaps a better justification of their pervasive role. It has been suggested that PROs could limit their function to monitoring infringement and enforcing rights, as well as to the collection of license fees from the users and their redistribution to the copyright holders, leaving them the negotiation. Nevertheless this separation would probably create new operative difficulties. Without a blanket license about the whole repertoire of its associates, the organization should spend much more time and efforts in monitoring the use of copyrighted material.

In some papers about the argument PROs have been indicated as a solution to a problem of anticommons in performing rights. This situation could occur in public performance of musical works if performing rights were complementary resources for the users. If this hypothesis were true the theory of PRO as a natural monopoly would be plausible. However, a problem of anticommons will realistically arise only in specific cases. If more authors have rights on a single song, they can avoid anticommons' problems with a preliminary agreement. Another potentially problematic situation is related to the use of musical works of different authors in a radio or television program. If the songs of program's playlist were complementary goods, each author could impose his own conditions, demanding a fee high enough to harm the production of the program itself. However, it is quite improbable that a song is so indispensable for a program. If an author demands an excessive fee for authorizing the public performance of his work, the producers of the program will simply use another song, enough similar to the former to be a good substitute. Solution of this problem does not need a blanket license over a large repertoire, as released by PRO.

From the demand side the supporters of the theory of natural monopoly usually stress the role of the PROs as clarifying the confusion of a market with a multitude of copyright holders. Although the number of creators of musical works is very high, the commercialization of their production is usually made through the corporations of the music industry. Some superstars directly produce their songs and there are also many small, independent producers. However, these two categories usually perform the rights' administration through agreements with the big corporations too. Therefore the music industry is so concentrated that the need of a monopolistic entity intermediating between the supply and demand finds no confirmation in the structure of the market.

A further argument from the demand side in favor of the PROs is that blanket licenses reduce the possibility of involuntary infringement of copyright laws. With a blanket license for all the material of a PRO repertoire users do not risk to perform unauthorized songs. For the users the license fees paid to the PRO would represent a sort of insurance premiums. Nevertheless the risk of involuntary infraction can be avoided with ordinary legal instruments, like appropriate regulations, indemnity clauses or specific agreements. In addition, users usually perform pre-recorded songs. The responsibility for eventual infringement of copyright laws would lie on the producers of the record rather than on final users.

In conclusion, the existence of a natural monopoly in the market of access to musical compositions is not confirmed. In economic terms the monopolistic role of the PROs is not justified neither from the supply side nor from the demand side. Moreover, the new technologies are further weakening the arguments for the maintenance of collective administration of performing rights.

## 2 Former technological fallout: radio and record industry

Modern debate about effectiveness and enforcement of copyright's laws mainly deals with the impact of the new technological tools and facilities. However, troubled relationship between technological evolution and protection of intellectual property is not new. Similar problems arose with the coming of radio as mass communication and entertainment medium. Radio listening is not very different from unauthorised MP3 downloads. Nevertheless, record industry does not apparently consider the radio dangerous.

Complex relation between radio and record industry has been analysed by Liebowitz ([2]). According to the author, radio listeners may search reasonable substitutes for the purchase of pre-recorded copies of their favourite songs. This is the effect of substitution, negatively affecting the demand of disks or CDs. Another effect is the so-called exposure effect. Radio listening allows a

preliminary sampling of copyrighted musical works. The consumer could be so delighted by a song listened to the radio to buy the CD containing it. However, the overall impact of exposure effect on the demand is uncertain.

Both these effects also occur with MP3 downloading, although in this case exposure effect is probably lower. Radio stations play music nearly randomly and the listeners cannot choose the songs that will be played, while downloading from Internet is intentional and made with the help of search engines.

The article of Liebowitz starts from the formerly reported considerations to analyse the relations between radio and record industry in the United States between the '20s and '30s of XX century and the effects of diffusion of radio stations in the United Kingdom after 1950. The available data show that the diffusion of radio in the United States during the "roaring twenties" occurred in concomitance to a relevant decrease of record industry's profits. Maybe the growing success of cinematographic industry played a role in this situation, but the true responsible was probably a substitution effect due to radio listening. Only after the '50s the demand of recorded music began to grow again and maintained a stable growth for many decades, until the new digital technologies put record industry in a new trouble. A possible cause of the improvement of record sales after the '50 could be the rise of television and the decline of radio as main entertainment medium, although alternative explanations are plausible.

The situation of United Kingdom was a little different, because record industry and radio had lived together for many years without problems. However, radio programmes of BBC were not very attractive for music listeners. When new independent radio stations were authorised, they represented a true alternative to the purchase of recorded music, mainly for younger people. Resulting overall effect was not positive for the sales of record industry.

The USA and UK cases are empirical confutations of the traditionally accepted claims of symbiosis between radio and record industry. The most remarkable aspect of symbiotic theory is that it has been subscribed for many decades by both the protagonists of the conflict. It is a paradoxical situation, considering the current sharp debate about the effects of new technologies on record sales.

### 3 The impact of new technologies

The new digital technologies have been affecting cinematographic and music industries, whose products are typically protected by copyrights. Digital format of movies and songs, like MP3, allows easy transfer by Internet. MP3 compression algorithms make possible high quality

reproductions on small size files, easily manageable through the P2P networks. Napster is the most known P2P system, but its heirs have been perhaps more successful. Broader bandwidth connections and cheaper recording software and tools make the piracy of copyrighted works relatively simple.

Economical aspects of P2P networks have been studied only by a few authors, as Liebowitz ([3]). Unauthorised downloading of songs and movies can be analysed in the same way as the relation between radio and record industry. However, substitution and exposure effects are different. People may download a song from a website to check if they like it. Unauthorised download would be a way for preliminary sampling of CDs to purchase, as radio listening. The main difference from radio is that P2P users choose the material to download. In addition, downloaded material is copied so purchase is not necessary, although some users could also purchase CDs to support their favourite singers and authors or for ethical reasons. Legal purchase may also be preferred to avoid the waste of time required for downloading all the songs.

In economical terms the utility of a CD derives from the users' appraisal of the songs recorded on it. Maybe they like only a part of its content. With preliminary sampling of songs the purchase of a CD is less risky. Such behaviour should enhance the expected utility of the CD and improve the sales, assuming that prices do not change. However, real situation is more complex. With modern technology CD production is very cheap, so variable costs are much lower than selling prices. Therefore marginal costs are negligible and profit maximisation corresponds to revenue maximisation. At maximising profit price the CD demand elasticity should be 1. This elasticity is also related to the elasticity of general demand for music-listening services. Because of the competition between music corporations, demand elasticity of the whole industry will be lower than the elasticity of the single companies operating in music market, like CD producers. Unauthorised sampling allows the availability of more music-listening services at a constant CD price, so its effect will be the reduction of prices of music-listening services. Industry revenue due to these services will fall too. However, assuming that CD price remains fixed, reduction of revenue will occur through lower sales. It is precisely the opposite to sampling expected effect. In addition, the substitution effect will unambiguously cause a further reduction of CD sales and therefore of their price.

Another effect to take in account is the network effect. It would occur if unauthorised access to songs, and generally copyrighted material, through P2P networks increased their utility for everybody. In this way, people not performing unauthorised download could be induced to buy more CDs. Network effect may be global or local. A global network effect affecting CD sales is not probable, although a song may be appreciated everywhere. Local network effects are more

probable, although they are very peculiar. For instance, somebody may visit his friends and listen to a song they have illegally downloaded; thereafter he may decide to buy the original CD, so the friends will listen to that song when they visit him at his home. Such effect would be too feeble to improve the CD sales in a significant way.

There is a further effect to consider. It is the indirect appropriability and is typically related to the increase of value of an original CD due to its reproducibility in more copies. The possibility of making copies would increase the intrinsic value of CDs, so their demand would increase too. This additional value can be indirectly recovered by sellers through the increase of CD market prices. Indirect appropriability has been empirically documented for the photocopies of journals. Publishers are well aware that unauthorised copying of journals mainly occurs in the libraries, so libraries are charged higher prices than individual subscribers. However, in file sharing preliminary identification of the originals that will be copied is not possible. Therefore indirect appropriability will not work in this case.

According to Liebowitz, available data on CD sales apparently confirm the previous considerations. Sales reached a peak at the end of '90s, but then there was a diminution, contemporaneously to the progressive diffusion of P2P networks and tools for low cost reproduction. It is not a simple coincidence, as demonstrated by the judiciary quarrels opposing copyright holders, like music corporations and software producers, and file-sharing systems. Other researchers have mentioned possible alternative causes, as lesser spending availability of potential purchasers or the presence of CD substitutes, like the DVDs. However, they do not provide a realistic justification of observed diminution of CD sales. Further analysis of available empirical data is necessary, but hypothesis of Liebowitz about the existence of a negative correlation between the CD sales and the diffusion of P2P networks seems plausible.

#### 4 Technological enforcement of IP rights: Digital Rights Management

Technological progress has been having a severe impact on the position of copyright holders. Digital technologies undoubtedly allow unauthorised and indiscriminate copy of songs and creative works on a formerly unimaginable scale. This situation is highly indicative of the inadequacy of current market equilibrium for demand of copyrighted works.

However, digital technologies also offer a possible answer to the weakening of copyright protection. They enable discriminated access to the copyrighted material, providing users with different levels of authorisation. Producers could elaborate more sophisticated versions of their

products, selling them at prices corresponding to the different willingness to pay of the users. A differentiated prices system would provide enough revenues to support the creative effort of the authors. Obviously, price discrimination needs the prevention of arbitrage between the purchasers. Reselling of copyrighted material between users that purchased it at different prices would wane the effectiveness of a system based on price discrimination. The main advantage of digital technology is that it allows different access levels to copyrighted material.

New digital techniques and procedures for the protection and distribution of copyrighted material are generally defined as DRM or Digital Rights Management. Undoubtedly it would represent a solution to current problems of copyright holders. However, some aspects of DRM are controversial, as remarked by some authors like Katz ([1]). The availability of more resources would not improve the quantitative and qualitative level of creative production if it induced authors to create too sophisticated and advanced works for people to appreciate them. In addition, the so-called copyright industry includes several administrative and management activities, like promotion and distribution of copyrighted material, that are not creative. There is the serious risk that new available resources would largely benefit non-creative aspects of copyright industry rather than supporting the creative effort.

Another issue related to DRM is very critical. Many consumers of creative material use it as input for their own creations. In a DRM system it is quite probable that these users should pay high fees for the access. This situation would have a negative impact on new creations, as remarked by some authors like Musick ([4]).

A different, although socially negative consequence may also arise in presence of a positive effect on creativity due to larger amount of resources allowed by DRM. Better convenience in performing creative activities would subtract talents from other activities and jobs in socially crucial sectors like education, with negative effects on social welfare.

In addition, price discrimination means that some consumers should limit their access to product versions of lesser quality, that is not an equitable situation. It could be avoided in presence of competitive pressures, although they are not probable for goods like songs or films. Resulting benefits would be largely appropriated by copyright holders, although it is necessary to consider that a DRM system would provide access to copyrighted material to many users previously excluded from it.

Previous considerations clearly demonstrate that the introduction of DRM could have complex and only partially predictable effects on general welfare. Maybe it would improve the efficiency of market of creative goods, although not without some difficulties. Administration of copyright

through DRM systems would probably require a significant revision of present legal dispositions of the matter.

New digital technologies represent a potential menace to the collective administration of copyrights, as traditionally performed by PROs. All the administrative and monitoring tasks, as well as scale economies, invoked to justify the existence of a natural monopoly and therefore the necessity of PROs, could be performed without the need of apposite organisations in a such dominant position.

The introduction of digital management does not apparently provide a better solution to two problems. The former is the existence of complementary goods. DRM systems allow access to single songs and eventual complementarities would require negotiations with more authors, while this problem is avoided with the PROs' system of blanket licenses. It is also true that new digital technologies offer a larger range of potentially substitutive products, so complementarity will become even more improbable.

The latter problem is more serious. Radio stations playing songs at request of the listeners must have free access to large repertoires. Collective administration apparently represents a better solution than the individual access of DRM systems. Nevertheless, an alternative solution to collective administration exists. It is represented by source-licensing. In source-licensing the author grants the producer a right to perform the composition. In addition, it authorizes others to do so. This solution has been adopted by US motion picture industry but does not have a great diffusion. If digital technologies contribute to weaken the position of PROs, source-licensing may have a better future in copyright industry.

## 5 Critics of Digital Rights Management

DRM technology apparently offers the possibility of improving economic efficiency in the market of copyrighted goods. This position has been subscribed by many authors, although there are some dissenting positions. Original criticism of DRM has been developed by Cunningham ([5]). In his paper the author analyses the effects of new digital technology with reference to the philosophy of Carl Menger. The approach adopted by Menger about material goods has been extended to the analysis of information goods. Access to information is generally assumed to have no quantitative limits. It does not deteriorate or reduce information availability, as it happens with material goods. Therefore a juridical system of ownership would not be necessary for information goods. Indeed intellectual property is traditionally justified with the need of providing enough resources for the authors rather than with the traditional arguments supporting the ownership of material goods.

In his paper Cunningham contests this assumption. According to his conclusions, ownership of information goods has been introduced because a quantitative relationship between the availability of such goods and social need for them exists, as for material goods. Immaterial creations are useful only if their concrete use is possible. This is allowed by the so-called information use technologies i.e. the technical tools and systems for the access, diffusion and exploitation of information goods. Information use technologies transform the intrinsic nature of these goods, introducing the access and consumption exclusiveness typical of physical resources. However, digital technologies have deeply changed the situation. Internet and digital innovations have removed the access rivalry and scarcity of the previous information use technologies. Therefore the exclusive ownership, represented by copyright laws, is not justified anymore.

Starting from these considerations Cunningham has developed a critical analysis of the role of DRM. The adoption of this technology would reintroduce discriminated access to information goods, recreating the quantitative relationship that new digital technologies have made obsolete. Therefore DRM would preserve the existence of the present system of intellectual ownership, at exclusive advantage of the copyright holders. The author also supports his considerations with ethical arguments, making appeal to the philosophy of Hume. The permanence of laws is justified only by their adequacy to the social and human reality they regulate. Conservation of obsolete forms of juridical protection may easily have negative effects on social welfare, often at exclusive advantage of a narrow minority.

## 6 Copyright protection and market competition in new mass-media markets

Modern technologies have also affected sectors of mass-media industry usually considered mature and well consolidated. Traditional services offered by radio-television industry are characterised by free accessibility, non-rivalry and non-scarcity. Indeed the only significant constraint is the availability of broadcasting frequencies. Saturation of electromagnetic spectrum could be a problem for radio-television industry, but it has been avoided with the adoption of new digital techniques for signals' compression and encoding. Transmission is performed through networks of satellites allowing the coverage of several countries. Such techniques allow to discriminate access, differently from the traditional free air systems. Subscribers to satellite pay-TV services receive decoders allowing the view of the encoded programmes.

It has been said that the advent of digital pay-TV has reintroduced competition in a sector affected by immobility. However, such competition has been gradually becoming weak. In these last years

several mergers have characterised the pay-TV industry in Europe. In Italy the agreement between Stream and Telepiù has led to the birth of Sky Italia, the monopolist *de facto* of the Italian pay-TV market. This case has been analysed by Matteucci ([6]). In his paper the author has described a model of oligopolistic competition and entry deterrence. The key assumption is that there is a relation between the accumulation of contents of each pay-TV operator and competition for subscribers. Programming contents are generally financed and produced by pay-TV operators themselves. Therefore they are subjected to intellectual property rights. In addition, although an European transmission standard has been defined (DVB-S), no uniformity has been established for reception and encoding. Consumers shall subscribe to the pay-TV platform owning its broadcasting right if they want to access to the relative content. Therefore each pay-TV operator can behave as a monopolist.

The model of Matteucci is a game with several steps involving two firms, indicated as A and B. In the first step the firm A decides to enter in the market, making investments in production or acquisition of TV programmes. In the second step the firm B decides if entry in the market is convenient. If it decides for entry too, it will acquire or produce its own programmes. Thereafter the two firms will invest in the necessary broadcasting equipment and begin to compete for the subscribers. Alternatively, the market could have a monopolistic configuration, with only one firm entering in it.

First of all, the analysis requires the evaluation of the price the two platforms will require to their subscribers, the so-called content equilibrium price. It shall simultaneously achieve the maximisation of both consumers' utility and firms' profits. After the purchase of the decoder, consumers' demand of subscriptions to platform's programmes is quite inelastic. Subscription prices will be set up to the level corresponding to the programmes' marginal utility for the subscribers. The next step of the analysis consists of the evaluation of hardware equilibrium prices. They correspond to what subscribers have to pay to acquire the equipment for reception and decoding of programmes.

According to Matteucci the market may have a duopolistic configuration if both the operators make an entry decision. They start a competition a la Bertrand: the firms fix the price and the market establishes the demand level, with an equilibrium corresponding to the situation of a perfectly competitive market. The analysis shows that duopoly can exist only if the two platforms have equivalent or not too much different contents.

Being the first operator to enter in the market, the firm A may decide the number of its own programmes according to two alternative strategies. The former is the opposition to the competitor's entry, creating a monopoly. Nevertheless the feasibility of a monopolistic configuration depends on

the equipment's cost for the firm. For specific values of equipment's cost the entry decision could be profitable for the firm B too. Therefore the firm A could adopt a strategy of entry deterrence against B. In this case the number of programmes of A will be set at level corresponding to a null profit for B. However, the model shows that the investments in the content by the incumbent shall be proportionate to the intensity of consumers' preferences. Such behaviour has a negative impact on the profits. Therefore the firm A could prefer an agreement with the potential competitor, removing every obstacle to its entry in the market. Result is a duopolistic equilibrium, where A maintains the advantageous position of first entry. It will choose a profit maximisation content, in correspondence of the number of programmes forming the content of B.

Situation would be different if the two operators simultaneously decided the entry. Market equilibrium may correspond to a situation of symmetric duopoly. It can be demonstrated that in this configuration equilibrium prices would determine for each operator a market share corresponding to a duopolistic market where A is the first to make entry decision.

In conclusion, the model demonstrates that, depending on the hardware costs and potential subscribers' preferences, the incumbent operator in pay-TV market may prefer to renounce to a monopolistic role allowing the entry of other firms. If the consumers have strong preferences for the content of an operator, it will find too onerous to maintain its monopolistic position. Monopoly can be established if an operator has the first mover advantage. Intellectual property rights on the content allows its exclusive availability for the operator that has produced or acquired it. If first mover advantage cannot be exploited, a stable symmetric duopolistic equilibrium is possible. Breakdown of such equilibrium and pursuit of a monopolistic position would not be convenient for any firm.

## 7 Role of public regulation

Intervention of public authorities is usually invoked to improve social welfare. The possible forms and effects of public regulation have been examined in the pay-TV market ([6]). Different equilibrium conditions correspond to a different redistribution of surplus. Consumers' surplus decreases for higher equipment costs both in duopoly without entry barrier and symmetric duopolistic equilibrium. Instead in a monopolistic market consumers' surplus depends only on the strength of their preferences, without relation to equipment costs. In addition, an enough high level of equipment costs will make the consumers' surplus in duopoly worse than in a monopoly. However, if value attributed to equipment is appropriately high the surplus of consumers in duopoly

will be always higher than in monopoly. Duopolistic competition would transfer intrinsic value of equipment to subscribers rather than to producers, that retain it in the monopolistic configuration of the market. The importance of this result is that the improvement of value of equipment due to technological innovation will provide an higher benefit to the consumers in a duopolistic market. According to Matteucci the public regulator should promote the creation of a duopolistic equilibrium in the pay-TV market, to achieve a better and more equitable level of social welfare. The author also remarks that monopolies in mass media market are not recommended because of their negative effects on pluralistic information. Some decisions of regulation authorities, promoting a more equilibrate acquisition of contents by pay-TV operators in Italian market, should enhance competition, allowing a better result in terms of social welfare.

Role and nature of public regulation dealing with copyright protection remains controversial. In a recent work Farchy ([7]) remarks that infractions to intellectual property rights have been hitherto contrasted with legal interventions or technological means, like DRM. Nevertheless infractions to copyrights are not perpetrated by deviant minorities but represent the behaviour of a growing number of common people. The problem should be approached with economical means, assuming that intellectual property rights have the primary goal of providing a financial support to the creativity of authors.

Although alternative market-based solutions may be found, Farchy considers public intervention as currently the more effective substitute to traditional copyright protection. Public regulators could impose asymmetrical financial conditions for the access to Internet, in order to disincentive the uploading of copyrighted material. However, this solution would damage the most relevant characteristic of Internet i.e. the interactivity it offers to the users. Other solutions are based on the direct public intervention in creative production, through subsidies to the authors or even direct production. Both these options have been discredited, the former because it encourages cronyism and conditioning of authors, the latter because it is quite unacceptable in modern pluralistic democracies.

Alternative solutions based on public regulation are more original. Farchy mentions compulsory licensing as a possible substitute of current copyright system. With compulsory licensing authors drop their rights in exchange for a compensation consisting of a lump sum payment. The amount of lump sum is established by negotiation or public decision. In this way users will be facilitated to access to creative material, without the need of authorial consent. However, the applicability of compulsory licensing to digital world has not still been tested. It could have unpredictable effects on current copyright industry. Compulsory licensing would probably reduce the revenues of copyright industry, but some analysts have noted that, if compulsory licenses had been adopted before 1999,

the development of P2P networks would have had positive consequences for authors and producers of songs and other copyrighted products.

Finally, a more traditional form of public intervention is the introduction of taxes to compensate the losses of copyright industry due to unauthorised duplication of their products. The targets of this solution are the producers of hardware and software tools used for piracy, as well as Internet access providers. However, fiscal option would excessively penalise the legitimate uses of such tools. People that do not access to P2P networks but need broadband Internet access for professional use would be damaged because a discriminating system of taxation of net services is quite impossible. Introduction of controls on Internet accesses to levy compensation taxes would be too dangerous for the privacy and perhaps too complex and expensive to administrate.

## 8 Conclusion

Intellectual property has been for a long time an academic and exoteric topic, quite distant from the ordinary life of people. It has been prevalently a debate object for lawyer and legislators. Situation has dramatically changed in the last decade. Technology has undermined the effectiveness of traditional copyright protection. Nowadays songs, literary works and scientific papers can be converted in digital format, duplicated and distributed everywhere at negligible costs.

Many authors and producers invoke more rigid enforcement of existing laws. However, the unique aim of these laws should be the improvement of general welfare, encouraging and protecting the creative effort of the authors in artistic and scientific disciplines. Therefore, although an imprudent revision of these laws could have unpredictable and perhaps negative effects, they must be examined taking in account their effectiveness in pursuing their original goal.

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# Acronyms

DRM	Digital Rights Management
DVB-S	Digital Video Broadcasting - Satellite
MP3	MPEG 3
MPEG	Motion Pictures Expert Group
PRO	Performing Rights Organisation
P2P	Peer-to-peer
SERCI	Society for Economic Research on Copyright Issues
WIPO	World Intellectual Property Organisation
WPPT	WIPO Performances and Phonograms Treaty